



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/796,017 | 03/10/2004 | Keijiro Take | 249320US-6 DIV | 2657 |
| 22850 | 7590 | 09/28/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | PHAN, TRI H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2661 | |

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,017

Applicant(s)

TAKE, KEIJIRO

Examiner

Tri H. Phan

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/156,703 (US 6,477,158).
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the Response/Amendment filed on July 18th, 2005.

Claims 1-2 are now canceled. Claims 3-6 are now pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al.** (U.S.5,740,168; hereinafter refer as '**Nakamura**') in view of **Adachi** (U.S.6,084,884; hereinafter refer as '**Adachi**').

- In regard to claims 3 and 5, **Nakamura** discloses in Figs. 3A-B, 2A-B, 4, 20A-B, 25 and in the respective portions of the specification about the method and apparatus for switching radio link at the base station in the mobile communication employing code division multiple access 'CDMA' for radio access with the mobile stations (For example see Abstract; col. 5, lines 10-30); wherein each base station's transceiver unit ("*base station*"; For example see Fig. 2A) under the control of the base station control unit includes the switching timing set up unit, the

Art Unit: 2661

switching timing information changing unit ("*timing information sending unit*"), the spread code switching unit and the control unit ("*switching unit*") as disclosed in Fig. 2B; for selecting and transmitting the timing information ("*timing information*") and new spreading code ("*code information*"; wherein, it is obvious that the new spreading code is the "*second code*" and the being used spreading code is the "*first code*") to the mobile station for switching the spreading codes in synch ("*switching in synchronization*") between the base station and the mobile station, when detecting the link quality degradation, (For example see Figs. 4, 20A-B, 25; col. 6, line 18 through col. 7, line 38); and wherein the transceiver unit of the mobile station ("*mobile station*") includes the switching timing set up unit, the switching timing information change detection unit, the spread code switching unit and the control unit as disclosed in Fig. 3B, for receiving the new spreading code designation signal ("*code information*") containing the selected unused spreading code (For example see Figs. 4, 20A-B, 25; col. 6, lines 35-39; where, it is obvious that the newly selected unused spreading code is the "*second code*" and the 'being used' spreading code is the "*first code*") sent by the base station (For example see col. 6, lines 18-34); for receiving the switching timing information sent by the base station ("*timing information*"; For example see Figs. 4, 20A-B, 25; col. 6, line 60 through col. 7, line 3); and for switching to the newly selected spreading code ("*second code*") at appropriate timing (For example see Figs. 4, 20A-B, 25; col. 7, lines 4-15) for maintaining in synch between the base station and the mobile station ("*switching performed in synchronization*"; For example see col. 7, lines 28-38); and stopping/releasing the old link ("*releasing the first code*"; For example see col. 2, lines 9-11).

Nakamura further discloses about the use of unique words in each frame for setting up the switching timing in prescribed frames, e.g. M and N frames (For example see Figs. 4, 6-7; col. 8,

Art Unit: 2661

line 64 through col. 9, line 12), or using frame number (For example see Fig. 16; col. 14, lines 7-17), or using flag in each frame for period of time in boundary of frames (For example see Figs. 8-15; col. 11, lines 50-59); wherein, it is obvious the number or sequence of frames is in integer (*"timing information including an integer representing the frame"*). **Nakamura** does disclose about the method and system for using in the CDMA scheme, but fails to explicitly disclose about the *"multi-rate transmission"* of the CDMA. However, such implementation is known in the art.

For example, **Adachi** discloses in Figs. 1, 3, 7, 9-11 and in the respective portions of the specification about the system and method for achieving generation and selection of spreading sequences implementing in the multi-rate CDMA communications system (*"multi-rate transmission"*); For example see Figs. 1, 3, 7; col. 3, line 39 through col. 4, line 27; col. 5, lines 26-67) while assuring code orthogonal without interference between the users, which results in the degradation in the transmission quality.

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Adachi**, by implement the method for using and selecting spreading sequences in the multi-rate CDMA communications system into the **Nakamura**'s CDMA scheme, with the motivation being to improve the ability to carry out the transmission with different rates for different types, without interference between users as disclosed in **Adachi**: col. 1, lines 45-48.

- Regarding claims 4 and 6, **Nakamura** discloses in Figs. 3A-B, 2A-B, 4, 20A-B, 25 and in the respective portions of the specification about the method and apparatus for switching radio

Art Unit: 2661

link at the base station in the mobile communication employing code division multiple access 'CDMA' for radio access with the mobile stations (For example see Abstract; col. 5, lines 10-30); wherein each base station's transceiver unit ("*base station*"; For example see Fig. 2A) under the control of the base station control unit includes the switching timing set up unit, the switching timing information changing unit ("*timing information sending unit*"), the spread code switching unit and the control unit ("*switching unit*") as disclosed in Fig. 2B; for selecting and transmitting the timing information ("*timing information*") and new spreading code ("*code information*"; wherein, it is obvious that the new spreading code is the "*second code*" and the being used spreading code is the "*first code*") to the mobile station for switching the spreading codes in synch ("*switching in synchronization*") between the base station and the mobile station, when detecting the link quality degradation, (For example see Figs. 4, 20A-B, 25; col. 6, line 18 through col. 7, line 38); and wherein the transceiver unit of the mobile station ("*mobile station*") includes the switching timing set up unit, the switching timing information change detection unit, the spread code switching unit and the control unit as disclosed in Fig. 3B, for receiving the new spreading code designation signal ("*code information*") containing the selected unused spreading code (For example see Figs. 4, 20A-B, 25; col. 6, lines 35-39; where, it is obvious that the selected unused spreading code is the "*second code*" and the 'being used' spreading code is the "*first code*") sent by the base station (For example see col. 6, lines 18-34); for receiving the switching timing information sent by the base station ("*timing information*"; For example see Figs. 4, 20A-B, 25; col. 6, line 60 through col. 7, line 3); and for switching to the newly selected spreading code ("*second code*") at appropriate timing (For example see Figs. 4, 20A-B, 25; col. 7, lines 4-15) for maintaining in synch between the base station and the mobile station

Art Unit: 2661

(“*switching performed in synchronization*”; For example see col. 7, lines 28-38); and notifying the completion of the spread code switching (“transmitting the complete message to notice the completion of switching to the base station controller”; For example see col. 7, lines 13-16).

Nakamura further discloses about the use of unique words in each frame for setting up the switching timing (“*timing of switching*”) in prescribed frames, e.g. M and N frames (For example see Figs. 4, 6-7; col. 8, line 64 through col. 9, line 12) and maintaining the frame synchronization (“*timing information is used to synchronize the switch*”; For example see col. 8, lines 19-22), or using frame number (For example see Fig. 16; col. 14, lines 7-17), or using flag in each frame for period of time in boundary of frames (For example see Figs. 8-15; col. 11, lines 50-59).

Nakamura does disclose about the method and system for using in the CDMA scheme, but fails to explicitly disclose about the “*multi-rate transmission*” of the CDMA. However, such implementation is known in the art.

For example, **Adachi** discloses in Figs. 1, 3, 7, 9-11 and in the respective portions of the specification about the system and method for achieving generation and selection of spreading sequences implementing in the multi-rate CDMA communications system (“*multi-rate transmission*”; For example see Figs. 1, 3, 7; col. 3, line 39 through col. 4, line 27; col. 5, lines 26-67) while assuring code orthogonal without interference resulting in the degradation in the transmission quality between the users.

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Adachi**, by implement the method for using and selecting spreading sequences in the multi-rate CDMA communications system into the **Nakamura**’s CDMA scheme, with the motivation being to improve the ability to carry

out the different rate transmissions for different types, without interference between users as disclosed in **Adachi**: col. 1, lines 45-48.

Response to Amendment/Arguments

4. Applicant's arguments filed on July 18th, 2005 have been fully considered but they are not persuasive.

Applicant argues that **Nakamura** fails to disclose the “layer 3 timing message” of Applicant’s invention (in page 8 of the Remarks/Arguments). Examiner respectfully disagrees. **Nakamura** discloses about the method and apparatus for radio link switching scheme in which the communication between the base station and the mobile station is carried out through the radio link given in terms of frames, while providing the switching timing information formed by a layer 1 bit data in each frame of the radio link such as a unique word, a flag, a housekeeping bit, and a frame number (for example see col. 2, line 66 through col. 3, line 15; wherein the switching timing information in the frame is formed as in figs. 6-19) to the mobile station (“*timing message*”) in order to keep the switching between the base station and the mobile station in synch as disclosed in col. 7, lines 28-38. The feature, upon which Applicant relies “*timing message*” is not the switching timing information sent from the base station to the mobile station as disclosed by **Nakamura**, is not disclosed in the rejected claim(s) nor in the specification. Therefore, Examiner concludes that **Nakamura** teaches the arguable feature.

Further, Applicant also argues that **Nakamura** fails to disclose the “*releasing the first code*” or “*transmitting the completion message to notice the completion to the base station controlling apparatus*”. Examiner respectfully disagrees. **Nakamura** does disclose wherein the

Art Unit: 2661

base station and the mobile station notify the completion of the spread code switching to the respective control units ("*transmitting the complete message to the base station controlling apparatus*"; For example see col. 7, lines 13-16) after stopping/releasing the old link ("*releasing the first code*"; For example see col. 2, lines 9-11). Therefore, Examiner concludes that **Nakamura** teaches the arguable features.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Adachi et al. (U.S.5,586,113) and **Lee et al.** (U.S.6,614,810) are all cited to show devices and methods for improving the CDMA communications method and system in the telecommunication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

Art Unit: 2661

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
September 22, 2005



BRIAN NGUYEN
PRIMARY EXAMINER